TANDBERG 150

User Manual

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TANDBERG

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Environmental Issues

Thank you for buying a product, which contributes to a reduction in pollution, and thereby helps save the environment. Our products reduce the need for travel and transport and thereby reduce pollution. Our products have either none or few consumable parts (chemicals, toner, gas, paper). Our products are low energy consuming products.

Waste handling

No need to send material back to TANDBERG as there are no consumables to take care of. Please contact your local dealer for information on recycling the product by sending the main parts of the product for disassembly at local electronic waste stations, marking recyclable parts so the waste station can disassemble and re-use these parts.

Digital User Manuals

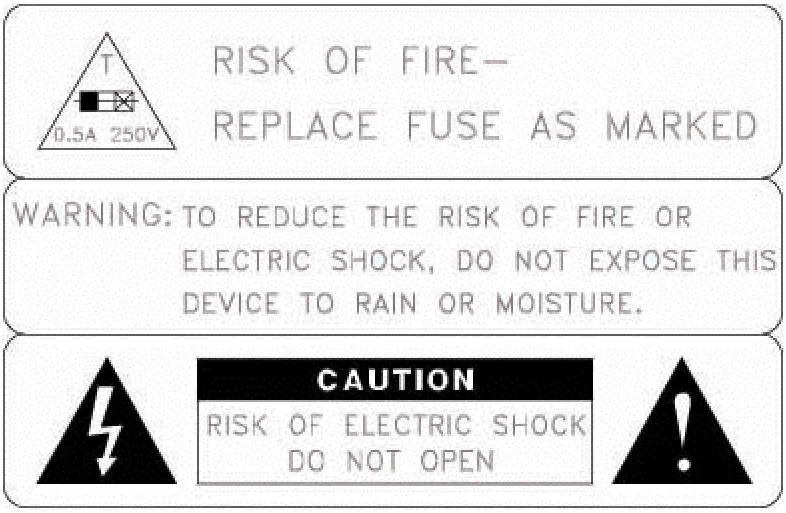
TANDBERG is pleased to announce that it has replaced the printed versions of its User Manuals with a digital CD version. Instead of a range of different user manuals, there is now one CD which can be used with all TANDBERG products, in a variety of languages. The environmental benefits of this are significant. The CDs are recyclable and the savings on paper are huge. A simple web-based search feature helps users directly access the information they need. In addition, the TANDBERG video systems now have an intuitive on-screen help function, which provides a range of useful features and tips. The content of the CD can still be printed locally if the need arises.

Operator Safety Summary

For your protection, please read these safety instructions completely before operating the equipment and keep this manual for future reference. The information in this summary is intended for operators. Carefully observe all warnings, precautions and instructions both on the apparatus and in the operating instructions.

Equipment Markings

The lightning flash symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltages" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.
The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions within literature accompanying the equipment.



Warnings

- Water and moisture - Do not operate the equipment under or near water - for example near a bathtub, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool or in areas with high humidity.
- Cleaning - Unplug the apparatus from the wall outlet before cleaning or polishing. Do not use liquid cleaners or aerosol cleaners. Use a lint-free cloth lightly moistened with water for cleaning the exterior of the apparatus.
- Ventilation - Do not block any of the ventilation openings of the apparatus. Install in accordance with the installation instructions. Never cover the slots and openings with a cloth or other material. Never install the apparatus near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Grounding or Polarization - Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician.
- Power-Cord Protection - Route the power cord so as to avoid it being walked on or pinched by items placed upon or against it, paying particular attention to the plugs, receptacles, and the point where the cord exits from the apparatus.

- Attachments - Only use attachments as recommended by the manufacturer.
- Accessories - Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Lightning - Unplug this apparatus during lightning storms or when unused for long periods of time.
- Servicing - Do not attempt to service the apparatus yourself as opening or removing covers may expose you to dangerous voltages or other hazards, and will void the warranty. Refer all servicing to qualified service personnel.
- Damaged Equipment - Unplug the apparatus from the outlet and refer servicing to qualified personnel under the following conditions:
    - When the power cord or plug is damaged or frayed
    - If liquid has been spilled or objects have fallen into the apparatus
    - If the apparatus has been exposed to rain or moisture
    - If the apparatus has been subjected to excessive shock by being dropped, or the cabinet has been damaged
    - If the apparatus fails to operate in accordance with the operating instructions

Precautions

When installing the TANDBERG 150, be aware of the following issues:

- Never install communication wiring during a lightning storm.
- Never install jacks for communication cables in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninstalled communication wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying communication lines.
- Avoid using communication equipment (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
- Do not use the communication equipment to report a gas leak in the vicinity of the leak.
- Always connect the product to an earthed socket outlet.
- The socket outlet shall be installed near to the equipment and shall be easily accessible.
- Never install cables without first unplugging the device from the power supply.
- 1TR6 network type is not approved for connection directly to the telecommunications network. This network type is only to be used behind a PABX.
- This product complies with directives: LVD 73/23/EC, EMC 89/366/EEC, R&TTE 99/5/EEC

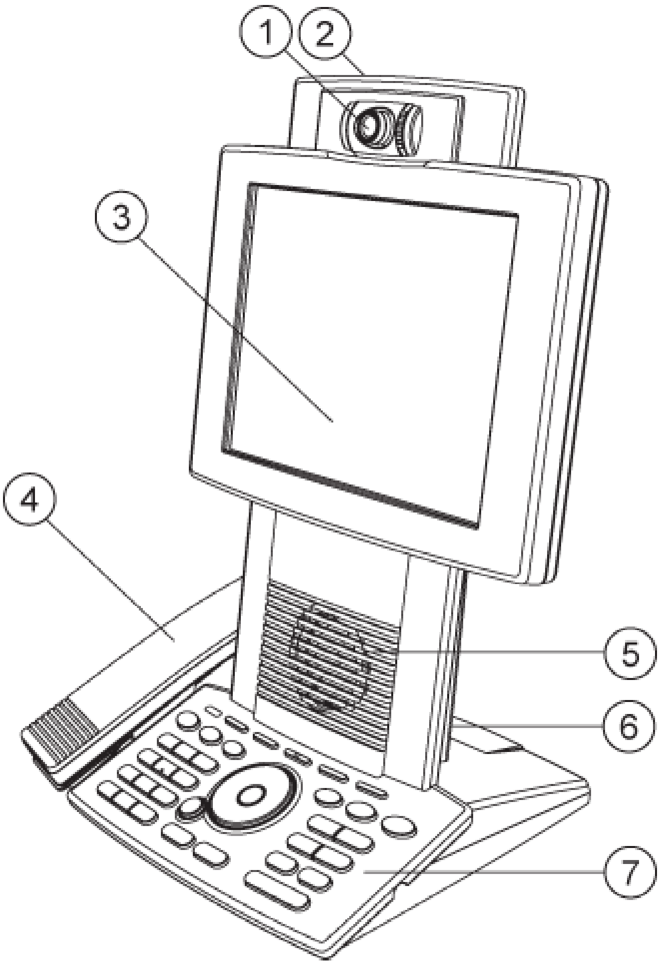
1 TANDBERG 150

The TANDBERG 150 system offers superior audio and video quality in a fully featured unit.

Main Features:

- H.323/IP bandwidth up to 512kbps
- Simplified and easy to use menu
- DES and AES Encryption
- Automatically selection between:
    - H.261, H.263 and H.264
    - G.711, G.722 and G.722.1
- Quality of Service
    - Precedence
    - DiffServ
    - Automatic downspeeding
    - Video error concealment using IPLR
- Built-in and automatic:
    - Gain Control
    - Noise Reduction
    - Echo Cancellation
- Audio and Video mute for privacy
- 8.4" LCD, 4:3 Screen
- Manual Tilt and focus camera
- Built-in Microphone and Speakers
- Privacy Handset and Headset
- Built-in Keypad
- Kensington Cable lock
- TTY (Text Telephone) support
- Power Over Ethernet
- Ethernet Switch. No additional LAN port required to connect 150 and PC to your LAN
- Handset and Handset Cradle is optional and detachable

1.1 At a Glance



1. Camera
The camera has manual tilt and focus. Turn the lens to adjust focus. (Tip! Press Selfview first to see your video picture). Tilt the camera by manually adjusting the tilt angle with the wheel to the right of the lens.

2. Microphone (located at the top of the product)

3. LCD Monitor

4. Handset
Handset is not included with the TANDBERG 150, but is an accessory device. Contact your TANDERG representative for more information.

5. Speaker

6. Camera Lens Cap Docking (at the back side)
Use the Camera lens cap at the back side of the product to cover the lens when the product is not in use. The camera lens cap protects the lens and also assures you from involuntary broadcasting of your video image.

7. Keypad

The keypad contains all the keys you need to control the system. See chapter 2.1 The Keypad for more information.

1.2 Unpacking and Mounting

Unpacking the system

The system lies fully assembled in the box. Remove the accessories box and carefully lift the system out of the box. To protect the camera lens while installing, it is recommended to keep the camera lens cap on. In the accessories box you find:

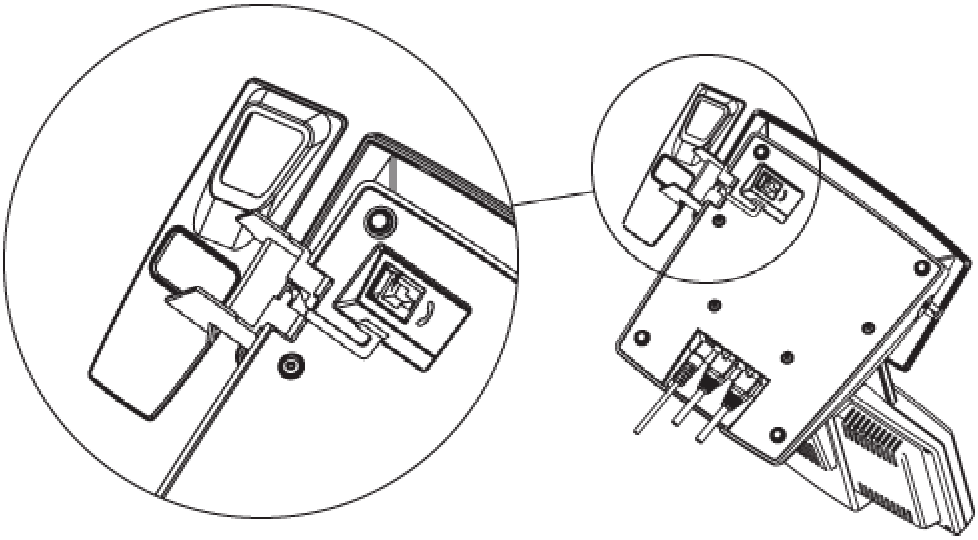
- LAN cable
- Power adapter and power cable

Handset

Handset is not included with the TANDBERG 150, but is an accessory device. Contact your TANDERG representative for more information.

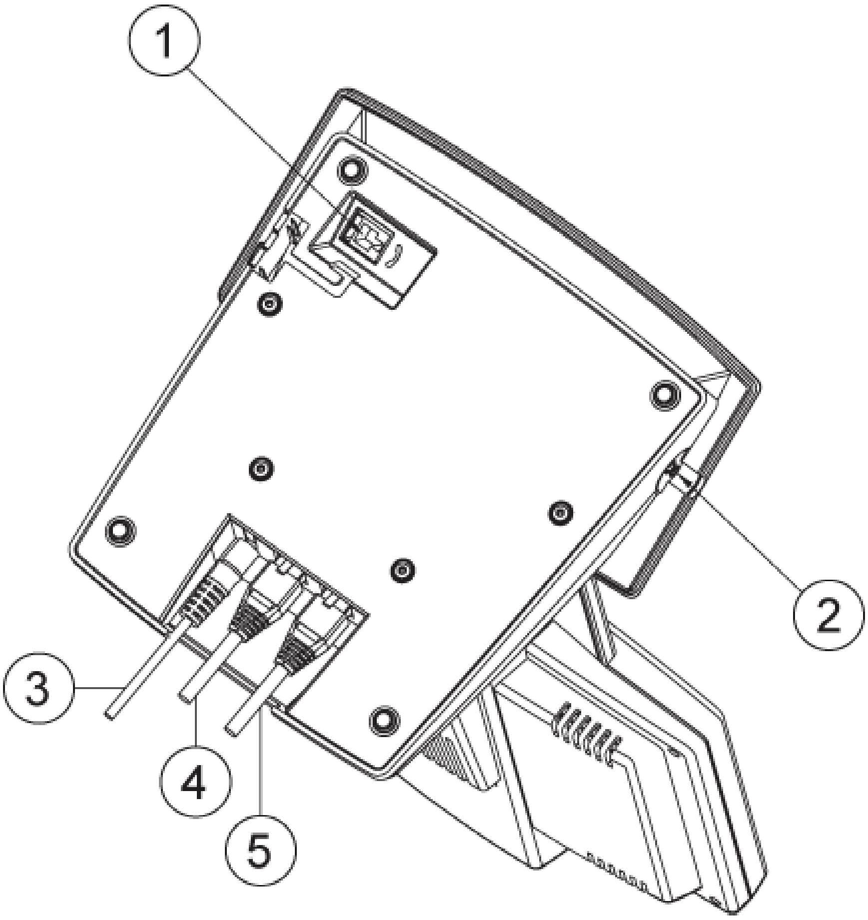
Mounting of the handset

Slide the handset bracket into the tracks at the underside of the system. Place the system in an upright position and lay the handset in its place. The handset is held in place by magnets. See chapter **1.3 Connecting Cables** for how to connect the handset cable.



1.3 Connecting Cables

Connect the cables as shown on the figure:



1. Plug for handset (optional)
Handset is not included with the TANDBERG 150, but is an accessory device. Contact your TANDERG representative for more information.

2. Plug for headset (optional)
The TANDBERG 150 has a 2.5mm 3-pole mini-jack connector at its right side marked with a headset symbol. This allows the user to connect a standard telecommunications headset to the system. Headsets with the microphone positioned in front of the user's mouth, connected to the earphone through a rod, tend to give more echo than earbud headsets with the microphone attached to the cord. TANDBERG recommends the Plantronics MX100 headset (www.plantronics.com, products → mobile)

3. Power cable

4. LAN 1

5. LAN 2

1.4 System Configuration

Before you begin it is recommended to configure your system. Navigate through the settings using the arrow keys and OK. Remember to press the Save button on the bottom of each menu to save your changes. Press Cancel (x) to return to the previous Menu.

General configuration:

1. Open the General Settings menu
Press the Settings key on the keypad to open the Settings menu. Select General Settings.

2. System Name
Give your system a name. Use the # key to change between lower case and upper case letters.

3. Auto answer
Decide whether you would like the system to let calls through automatically (Auto answer On), or if you want to answer the call manually (Auto answer Off). The option On + Mic Off means that the system automatically will answer incoming calls and switch the microphone off when the call is connected. Press Mic Off to switch the microphone back on.

4. Max Call Length
You can limit the maximum length of your calls. If your call exceeds the maximum Call Length, the call will disconnect automatically.

5. Save changes
Remember to save changes by selecting the Save button on the bottom of the menu and pressing OK.

2 General Use

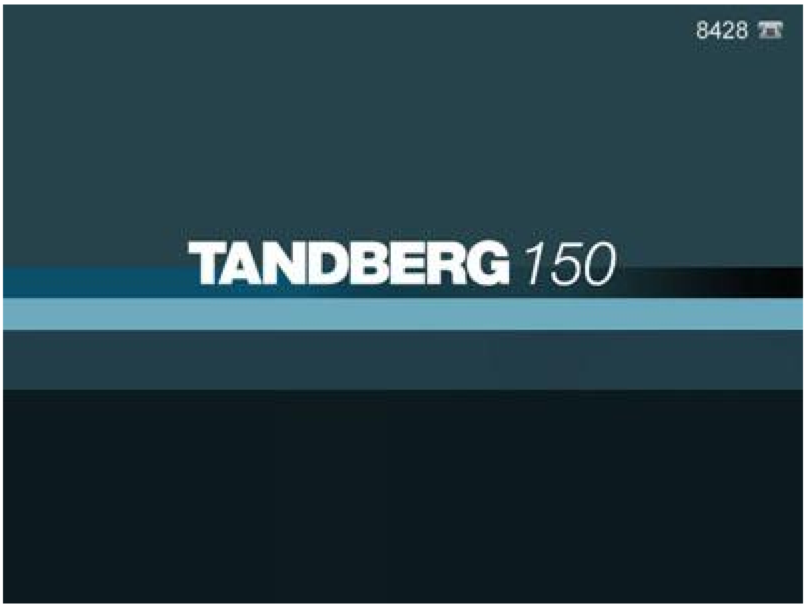
Wake up the system

When all cables are connected as described in chapter 1.3 Connecting Cables, the system is ready for use.

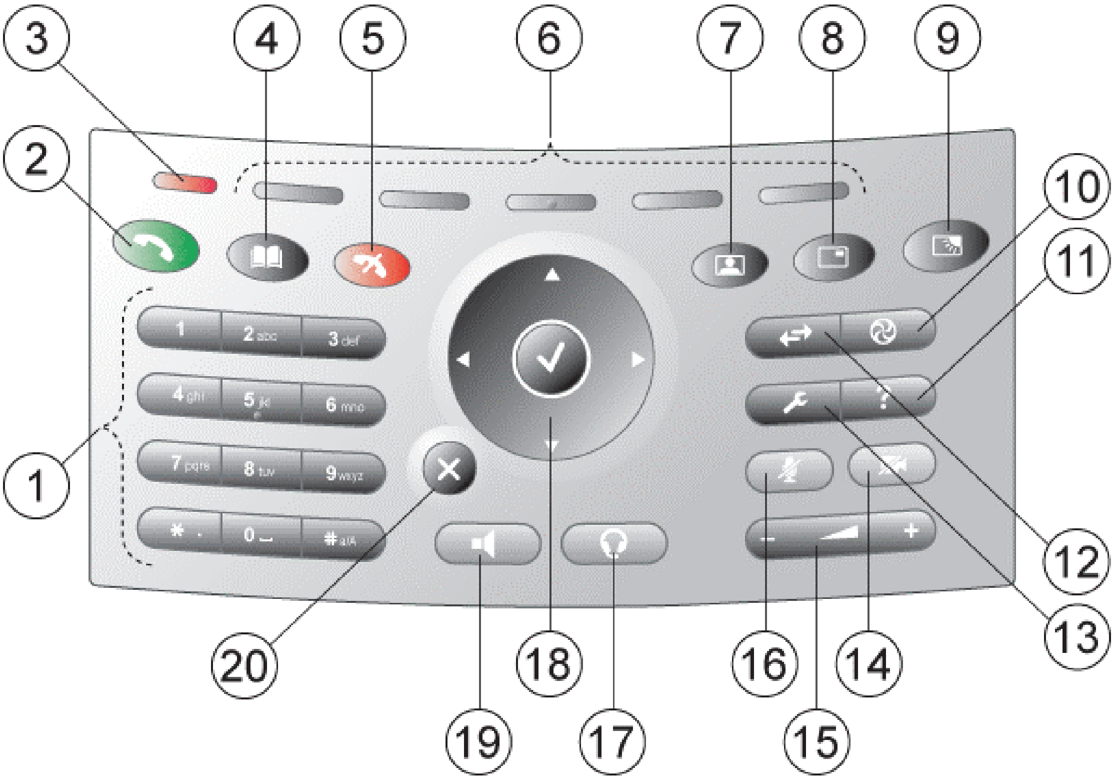
The Welcome Screen

When the system is powered, you will see the welcome screen. Your dial in number is displayed in the upper right corner. The on-hook telephone icon tells you that you are currently not in a call. Press OK or Cancel to hide the welcome screen. Press OK or Cancel to bring it back.

To check your video image, press Selfview on the keypad (see chapter 2.1 The Keypad for further information). Press Selfview again to go back to the welcome screen.



2.1 The Keypad



1. Number keys
Use Number keys to dial video numbers. Use the star key to get the dot sign when dialing an IP number.

When you are in an input field where letters are required, the system automatically goes to letter mode. Writing letters works like on a mobile phone. Press the key that corresponds to your desired letter. Press the key as many times as you need to get the right letter. Change to lower or upper case letters with the # key, and space with the 0 key.

2. Call key
Press the Call key to open the call menu. When you have dialed a number, press the call key to place the call (see chapter 2.3 Make a Call for more information).

3. Notification lamp
A red lamp is lit to indicate that you have and incoming call. The lamp is also lit when you power up the system. When the lamp turns off, the system is ready for use.

4. Phone Book
Press Phone Book to open the systems phone book. Store and recall your video contacts via the system Phone Book for easy placement of calls (see chapter 2.6 Phone Book for more information).

5. End Call
Use the red End Call key to end the current call.

6. Soft keys
For future releases.

7. Selfview
Selfview displays the picture of yourself. Press Selfview again to turn selfview off.

8. PIP
Press PIP (Picture In Picture) to get a smaller picture in addition to the full screen picture. The PIP is placed in the top right corner of the screen. Press PIP again to move it to the other corners of the screen. The fifth time you press PIP, it will disappear.

9. Brightness
Brightness lets you adjust the monitor brightness.

10. Services
For future releases.

11. Help
Press Help to get a quick guide about how to use the system.

12. Call Register
Press Call Register to se a list of your latest calls, both outgoing, incoming and lost calls.

13. Administrator Settings
Press Administrator Settings to open the settings menu. Administrator Settings contain all the settings of the system (see chapter 3 Settings for more information).

14. Privacy
When the Privacy key is pressed, no camera image will be sent out from your system. The Privacy key is lit when the camera is off. An indicator on the screen also appears as you press Privacy. Press the Privacy key again to deactivate privacy. Use Privacy to prevent others from seeing your video image.

15. Volume
Volume + and – adjusts the volume of the speaker. An indicator on the screen shows the volume level.

16. Mic Off
Press Mic Off to mute your microphone. The Mic Off key is lit when the microphone is off. An indicator on the screen also appears as you press Mic Off. Press the Mic Off key again to deactivate Mic Off. Use Mic Off to mute your outgoing audio.

17. Headset
Press Headset to activate headset. Remember to plug in your headset in advance (see chapter 1.3 Connecting Cables). The Headset key is lit when it is active. Press Headset again to deactivate.

18. Arrow keys and OK
Use Arrow keys to navigate in menus. Press OK to select menu items.

19. Speaker
Press Speaker to activate the speaker. The Speaker key is lit when the speaker is active. Press Speaker again to turn the speaker off.

20. Cancel
Cancel takes you back one step in the menu system. Use Cancel also to delete characters in an input field.

2.2 On Screen Indicators

The system has a number of icons signaling different settings:

Microphone Off
This indicator is shown when the microphone is turned off. Press the Mic off button again to turn the microphone back on.

Privacy
This indicator is shown when the Privacy key on the keypad is activated. No camera images are sent from your system when the privacy indicator is displayed. Press the Privacy key again to deactivate privacy.

Volume Off
This indicator is shown when the volume is turned off. Press Volume + to turn the volume back on.

Secure Conference, AES
This double padlock indicator is shown when AES encryption (Secure Conference) is active.

Secure Conference, DES
This padlock indicator is shown when DES encryption (Secure Conference) is active.

Not Secure Conference
This open padlock indicator is shown during the initialization phase for encryption. During this period the call is not secure.

2.3 Navigation

Arrow keys and OK
Navigate in the menu with arrow keys. The orange selector on screen shows the selected item. Press OK to select.

Back/Cancel button
The X button in the menu corresponds with the X key on the remote.

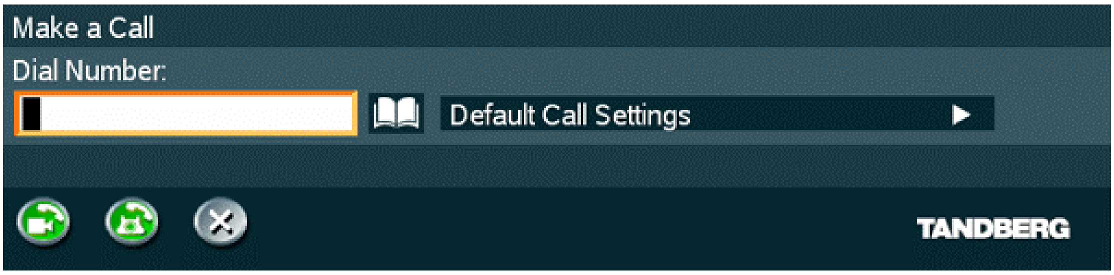
2.4 Make a Call

To open the call menu, do one of the following:

- Press the green button on the keypad
- Press a number key
- Press the speaker button on the keypad
- Press the headset button (remember to plug in your headset first)
- Lift up the handset (handset is accessory device with TANDBERG 150)

All of these actions will result in a dial tone and you can start dialing. You can enter a number manually in the input field or select the book icon to select a contact from the phone book.

The TANDBERG system can make both video calls and telephone calls. For video calls, choose Place Video Call in the call menu. For telephone calls, choose Place Telephone Call. Call Settings specifies the quality of the call. In most cases you can leave call settings unchanged.



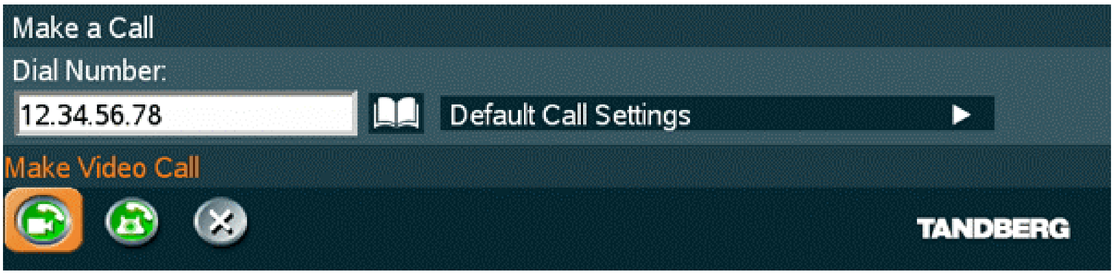
Choose among the buttons:

- Make Video Call
- Make Telephone Call
- Call Settings

2.4.1 Make Video Call

How to make a video call:

1. Press the green key on the keypad (or any of the other possibilities mentioned in chapter Make a Call) to open the Call menu.
2. Dial a video number with the number keys (use a star as separator in IP addresses).
3. Press the green key on the keypad or move the orange selector down to the Place Video Call icon and press OK to start the video call.

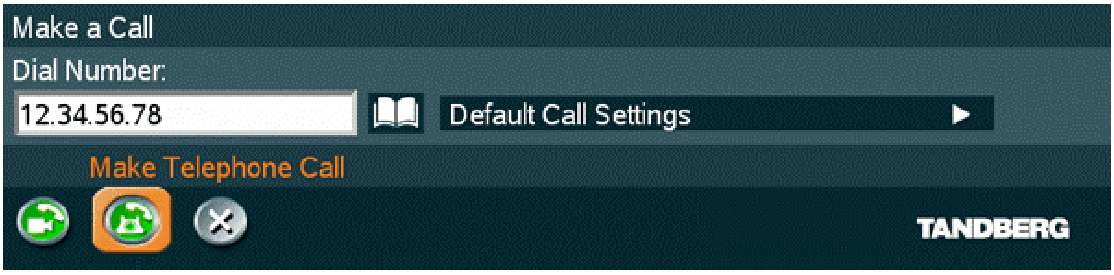


2.4.2 Make Telephone Call

The TANDBERG system has great audio- as well as video performance. Use the system both as a videophone and a telephone!

How to make a telephone call:

1. Press the green key on the keypad (or any of the other possibilities mentioned in chapter Make a Call) to open the Call menu.
2. Dial a telephone number with the number keys (use a star as separator in IP addresses).
3. Move the orange selector down to the Place Telephone Call icon and press OK to start the telephone call.

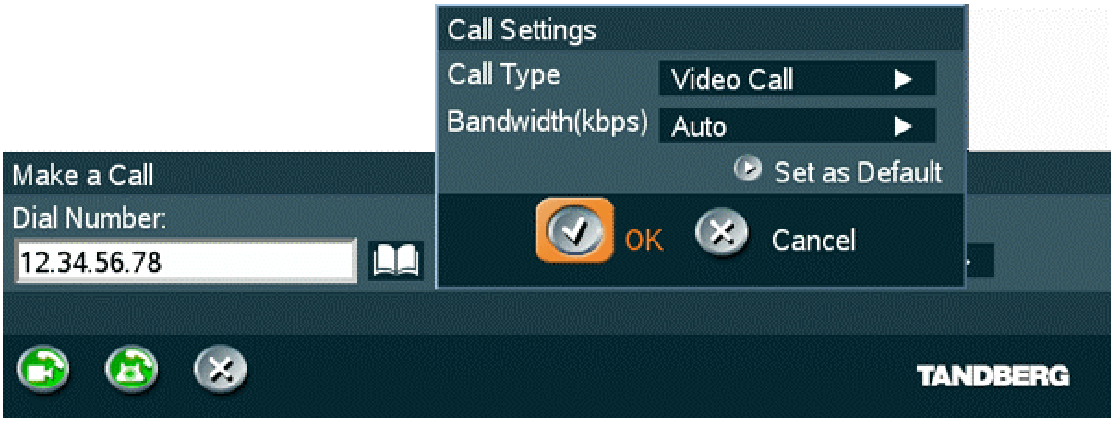


2.4.3 Call Settings

The field on the right in the call menu displays Call Settings. Call Settings gives you the opportunity to specify Call Type and Bandwidth.

How to use Call Settings:

1. Press the green key on the keypad (or any of the other possibilities mentioned in chapter Make a Call) to open the Call menu.
2. Move the orange selector to the Call Settings field on the right of the call menu and press OK.
3. Make desired changes to Call Type and Bandwidth.
4. Press OK to save. The new call settings will be displayed in the Call settings field.

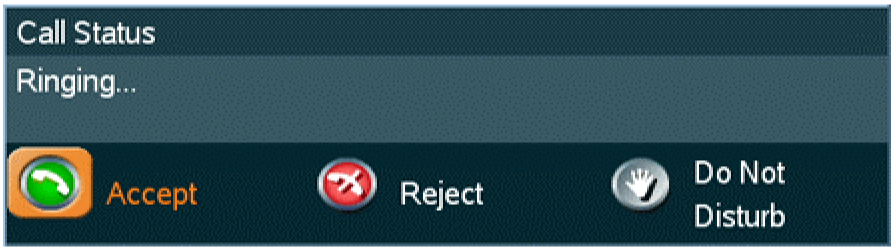


Call Type	Call Type can be set to Video Call (default) or Telephone Call. Using Video, the system will try to connect as a video call. Some network configurations will cause the fallback to a telephone call to fail. In these cases, you should set the call type to telephone and the call will be placed as a telephone type only.
Bandwidth	Bandwidth decides the quality of the video picture. The system will, by default, connect using Auto Bandwidth. This means that the system will establish a connection using a proper bandwidth for your call. The typical bandwidth used for IP calls is 384kbps. When bandwidth is set to auto, the unit will default to 384kbps.
Use Set as Default	If you want to change the default Call Settings, make the desired changes to the Call Settings and Press Set as Default. Press OK to Save. These settings will now be the default settings for all future manually dialed calls.

2.5 Answer an incoming Call

How to answer an incoming call:

1. To accept an incoming call, press the green key or press OK when the Accept button on screen is selected.
2. To reject and incoming call, press the red key or press OK when the Reject button on screen is selected.



Alternative ways to answer a call are:

- Pressing the speaker button
- Pressing the headset button (if a headset is connected)
- Lifting up the handset (if a handset is connected)

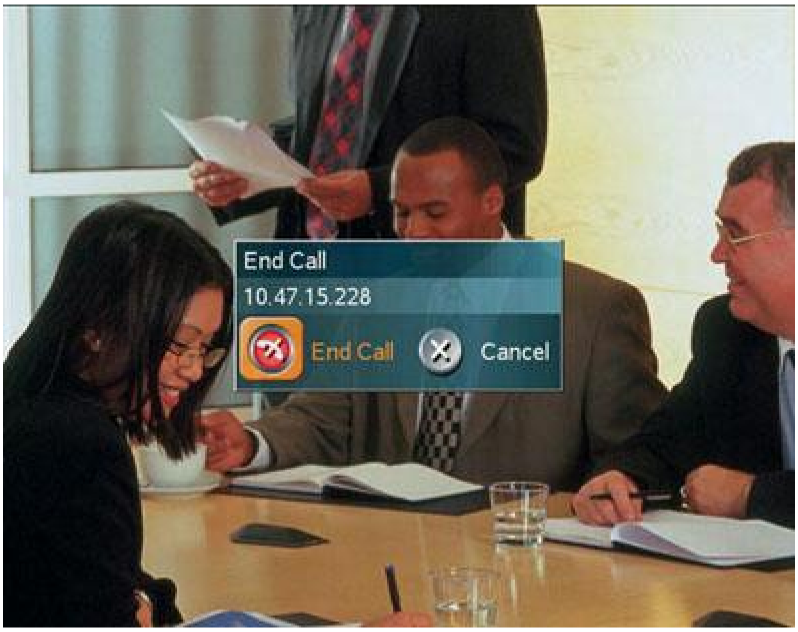
If Auto Answer is set to On, an incoming call will connect automatically. You can set Auto Answer On, On + Mic Off or Off in Settings - General Settings, see chapter 3.1 General Settings.

2.6 End Call

How to end a call:

1. Press the red key on the keypad. A dialog box appears on the screen.
2. Press the red key on the remote control again or OK to confirm that you want to end the call. Press Cancel to continue the call.

If you are using the handset, you can end the call by hanging up.



2.7 Phone Book

The local Phone Book stores up to 200 contacts. Using the Phone Book is time saving and makes sure you do not inadvertently call the wrong number.

The contacts are sorted alphabetically. Navigate the phone book with arrow keys or letter keys, searching on the first letter (like on a mobile/cellular phone). Press arrow to the left to select a button. You will see that the last selected contact will be marked.

Call History is found on top of the Phone Book entry list. Press Call History to see your placed and incoming calls. For unanswered calls are listed under Missed Calls.

How to make a call using the phone book:

1. Press the Phone Book key on the keypad.
2. Find your desired contact using the arrow keys or searching on the first letter with the letter keys.
3. Press the green call key on the keypad or press arrow key left to select the Call Now icon. Alternatively, press OK to select the contact. You will go to the Call menu, where you may edit the number or call settings before you place the call.
4. Wait for the call to connect.

Note that the number of the selected contact is displayed at the bottom line.

2.7.1 Global Phone Book

If your system is connected to an external management system like the TANDBERG Management Suite (TMS), it is possible to use a central contact list from the management system. These contacts can not be changed locally by the system, only from the management system. If you need to modify a number before dialing it, you can do so by hitting ok after selecting the entry, and modifying the number before placing the call. The changes are not saved in the contact.

The Global Phone Book can contain an unlimited amount of contacts. Using search makes it easier to find your right contact.

How to search in the Global Phone Book:

- Search on first letters with the number keys like on a mobile phone. Press "2" three times to jump to the letter "c" in the list.
- Press the Search button on the left of the Phone Book. Type a name and press OK. The system will list all entries that contains this letter combination. Press the button called "Top" to get back to the alphabetical Global Phone Book list.

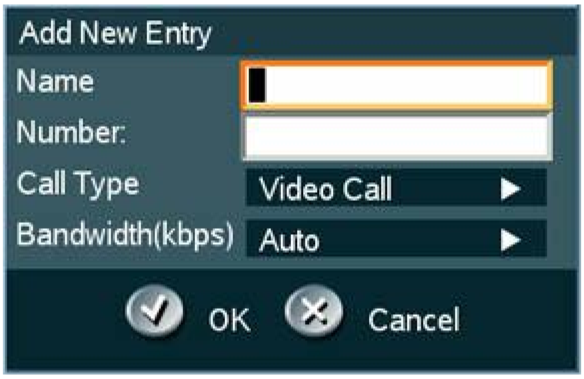
For contacts you use often, you may consider copying them from the Global Phone Book to your Local Phone Book. This makes them easier to find if your Global Phone Book is large, but the local copy would not be updated if the Global Phone Book contact is changed.

How to copy a contact from the Global Phone Book to the Local Phone Book:

1. Move the yellow selector down to the desired contact in the global phone book.
2. Press arrow key left, select the Copy to Local button and press OK.
3. The contact is copied to your local phone book.

2.7.2 New

Select the New button to make a new contact. You can store up to 200 contacts in your local phone book. To make a new contact, you must specify a Name and Number. Use the number and letter keys on the remote control (in the Name field you will automatically write letters, in the number field you will automatically write numbers). Call Type and Bandwidth are put to default if you don’t make changes. Press OK to save.



2.7.3 Edit

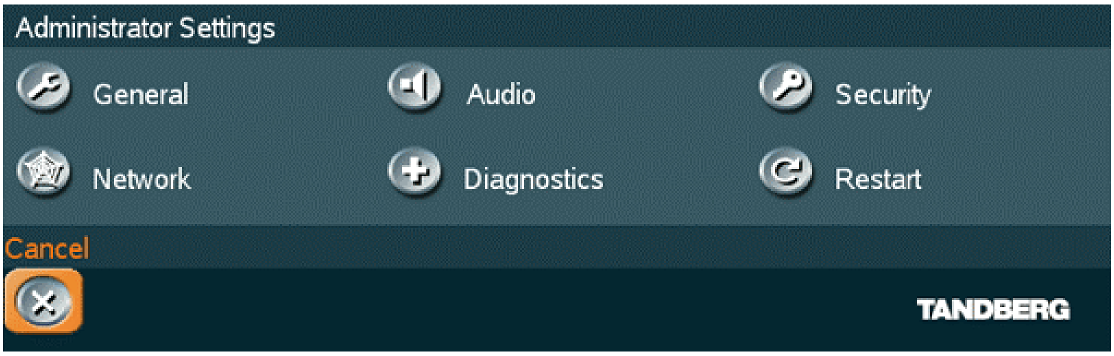
To edit a contact, highlight the contact and press arrow left. Press arrow key down to select the Edit button. In the edit window you can edit Name, Call Type, Number and Bandwidth. Press OK to save.

2.7.4 Delete

To delete a contact, highlight the contact and press arrow left. Press arrow key down to select the Delete button and press OK. Confirm by pressing OK again.

3 Administrator Settings

Settings contain all the settings of the system. Making changes to Settings will change the behaviour of the system.



Administrator Settings contain:

- General
- Audio
- Security
- Network
- Diagnostics
- Restart

3.1 General Settings

When installing the system, go through the General Settings menu to ensure that you have the right settings for your system, see chapter 1.4 System Configuration.

General Settings contain:

- System Name
- Autoanswer
- Max Call Length
- Global Phone Book Settings

3.1.1 System Name

System Name is blank by default. System name can be alphanumeric and up to 50 characters long. Follow the installation procedure to enter a System Name.

3.1.2 Autoanswer

The auto answer setting decides whether an incoming call is put through automatically or manually.

On	The system will automatically answer all incoming calls.
On+ Mic Off	The system will automatically answer all incoming calls and switch the microphone off when the call is connected. Press Mic Off to switch the microphone back on.
Off	You must manually answer all incoming calls by pressing OK or the Call key.

3.1.3 Max Call Length

This feature will automatically end both incoming and outgoing calls when the call time exceeds the specified Max Call Length. Max Call Length can have the following values: 0-999 (minutes), where 0 means off.

3.1.4 Global Phone Book Settings

Global

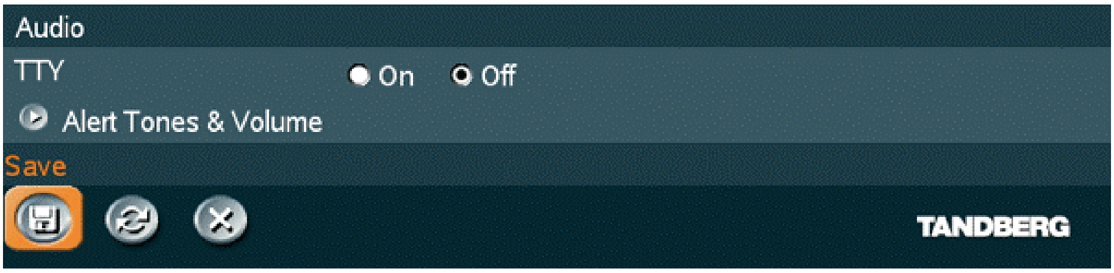
On	Global Phone Book is available in the menu.
Off	Global Phone Book is hidden from the menu and is unavailable for users.

IP address

Enter the IP address of the management system that provides the Phone Book.

Path
The Path indicates the function of the management system.

3.2 Audio



Audio contains the settings:

- TTY (Text telephone)
- Alert Tones and Volume

3.2.1 TTY (Text telephone)

A TTY is a special device that lets people who are deaf, hard of hearing, or speech-impaired use the telephone to communicate, by allowing them to type messages back and forth to one another instead of talking and listening. A TTY is required at both ends of the conversation in order to communicate.

To use a TTY, you connect the TTY device to the 2.5mm jack on the right side of the unit and set TTY to On in the Audio menu. Then, type the message you want to send on the TTY's keyboard. As you type, the message is sent over the phone line, just like your voice would be sent over the phone line if you talked. You can read the other person's response on the TTY's text display.

3.2.2 Alert Tones and Volume

Video Call Alert Tone and Telephone Alert Tone

To help distinguish between incoming video calls and ordinary telephone calls, it is recommended to use different ringing tones for video calls and telephone calls.

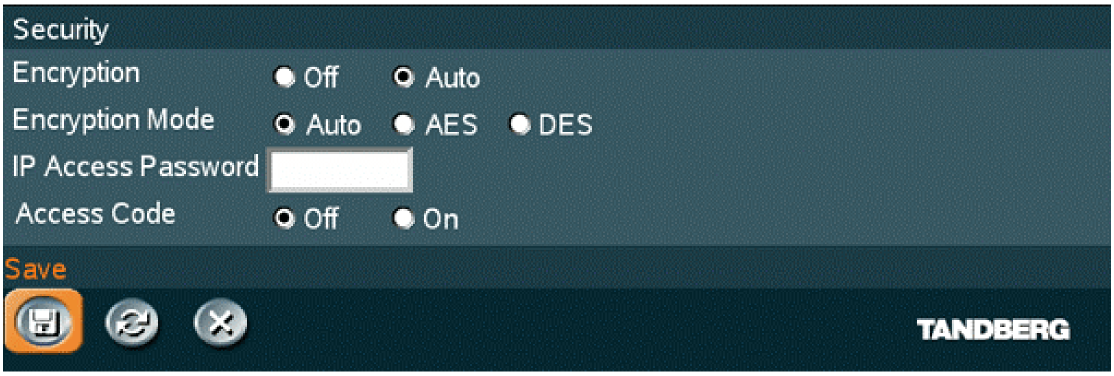
Alert Volume

You may change the volume level for the selected ringing tone.

Key Sound

On	There will be a sound indicator when pressing keys on the remote control.
Off	There will be no sound when pressing keys on the remote control.

3.3 Security



Security contains the settings:

- Encryption
- Encryption Mode
- IP Access Password
- Access Code

3.3.1 Encryption

(Country specific)

Auto	The system will try to set up calls using encryption. If the far end system supports encryption (AES or DES), the call will be encrypted. If not, the call will proceed without encryption. If the far end supports encryption, the systems will initiate encryption after the call is connected (an ‘open padlock’ symbol will be displayed). When encryption has been established, a ‘closed padlock’ symbol will be displayed.
Off	The system will not send or receive encrypted data.

Technical encryption information like encryption algorithm and encryption check code can be found in the Call Status menu.

3.3.2 Encryption Mode

Auto	The system will try to use the most secure encryption - AES, dependent on the capabilities of the other sites. If all the other sites do not support AES-encryption, DES encryption will be tried.
AES	The system will try to use AES with 128 bits encryption when setting up calls. If AES is not supported by the other site(s), no other type of encryption will be initiated.
DES	The system will always try to set up the call using DES with 56 bits encryption. If all other sites do not support DES, no other type of encryption will be initiated.

3.3.3 IP Access Password

By setting an IP Access Password on the system, all access to the system using IP (Telnet, FTP and WEB) requires a password. This password can be enabled from telnet or data port using the command: ippassword <ip-password>. The default IP password is "TANDBERG".

To remove this password, delete the stars shown in the input field in the menu. You can also remove the password from the data port using the command: "ippassword ”. From telnet, this is only possible by first entering the correct password.

3.3.4 Access Code

An access code will help you control the use of the system. All users must enter a code to identify themselves and the call will be charged on their account. Access Codes are handy for group systems where there are more users or divisions that share the costs of using the system. Access Code can be put to On and Off.

On	When making a call, an Access Code dialog box will be shown. The user must enter the correct password in order to put the call through.
Off	No password is necessary to make a call.

3.4 Network

The network menu contains:

- IP Settings
- H.323 Settings

3.4.1 IP Settings

Remember to restart the system after making changes to IP Settings. Changes in IP Settings menu will not have any effect before the system is restarted.

IP-assignment

DHCP (Dynamic Host Configuration Protocol) can be selected when a DHCP server is present.

DHCP	IP-address, IP-subnet mask and Gateway are not used because the DHCP server assigns these parameters.
Static	The system's IP-address, IP-subnet mask and Gateway must be specified in the IP-address field.

IP-address

IP-address defines the network address of the codec. This address is only used in static mode. In DHCP-mode, the assigned IP-address can be found on the Welcome Menu.

IP-subnet mask

IP-subnet mask defines the type of network. This address is only used in static mode. Your LAN-administrator will provide the correct value for this field.

Gateway

When using DHCP, the default gateway will be set automatically. If the LAN utilizes static IP addresses, IP address, subnet mask, and default gateway must be specified by the LAN administrator.

Ethernet Speed

Auto	The codec will auto-detect the speed/duplex on the LAN.
10/Half	The codec will connect to the LAN using 10Mbps speed/Half Duplex.
10/Full	10 Mbps speed/Full Duplex.
100/Half	100 Mbps speed/Half Duplex.
100/Full	100 Mbps speed/Full Duplex.

IP Access Password

By setting an IP Access Password on the system, all access to the system using IP (Telnet, FTP and WEB) requires a password. The default IP Access Password is “TANDBERG”.

3.4.2 H.323 Settings

E.164 alias

This is the E.164 address of the system. The E.164 address is equivalent to a telephone number, sometimes combined with access codes. Valid characters are 0-9,* and #. When using a gatekeeper, the system will send a message to the gatekeeper containing both the E.164 address and the system name of the system. The system will not register with the gatekeeper if the E.164 alias is not set.

H.323 Call Setup

Direct	An IP-address must be used in order to make a H.323 call. The system will not use a gatekeeper or call manager
Gatekeeper	The system will use a gatekeeper to make a H.323 call (the system will still be able to place calls directly to an IP-address without using the gatekeeper).
Call Manager	The system will use a call manager to make a H.323 call (the system will still be able to place calls directly to an IP-address without using the call manager).

Gatekeeper Discovery

Auto	The system will automatically try to register on any available gatekeeper. If a gatekeeper responds to the request sent from the codec within 30 seconds this specific gatekeeper will be used. If no gatekeeper responds, the system will not use a gatekeeper for making H.323 calls and hence an IP-address must be specified manually.
Manual	The system will use a specific gatekeeper identified by Gatekeeper IP-address.

Gatekeeper IP-address

This is the gatekeeper IP-address that is used if you specify H.323 Call Setup: Gatekeeper and Gatekeeper Discovery: Manual.

Call Manager Address

This is the call manager IP-address that is used if you specify H.323 Call Setup: Call Manager.

Advanced H.323 Settings

The Advanced H.323 Settings only have an effect if they are supported by your IP infrastructure.

NAT

NAT, Network Address Translation, is used in small LAN's, often home offices, when a PC and a videoconferencing system are connected to a router with NAT support. NAT support in the videoconferencing system enables proper exchange of audio/video data when connected to an external videoconferencing system (when the IP traffic goes through an NAT router). When NAT is On, the NAT Server Address will be shown in the startup-menu: "My IP Address: 10.0.2.1 (NAT)".

NAT Address

This must be the external/global IP-address to the router with NAT support. Packets sent to the router will then be routed to the codec. In the router, the following ports must be routed to the codec's IP-address:

Port 1720
Port 5555-5560
Port 2326-2365

Please contact your TANDBERG representative for further information.

QoS Type

Off	No QoS is used.
Diffserv	Diffserv QoS method is used. Please see below for details.
IP Precedence	IP Precedence QoS method is used. Please see below for details.

IP Precedence Video

Used to define which priority audio, video, data and signaling should have in the network. The higher the number, the higher the priority. The priority ranges from 0(off) - 7 for each type of packets.

Auto will provide the following priority:

Audio	4
Video	4
Data	3
Signaling	6

IP Type of Service (TOS) helps a router select a routing path when multiple paths are available.

Delay	Tells the router to minimize the delay.
Throughput	Tells the router to maximize the throughput.
Reliability	Tells the router to maximize the reliability.
Cost	Tells the router to minimize the cost.

IP Precedence Telephony

Used to define which priority audio should have in the network for telephone calls. The higher the number, the higher the priority. The priority ranges from 0(off) - 7 for each type of packets.

Auto will provide the following priority:

Audio	4

Diffserv Video

Used to define which priority Audio, Video, Data and Signaling packets should have in an IP network. The priority ranges from 0 to 63 for each type of packets.

Diffserv Telephony

Used to define which priority Audio packets should have in an IP network for telephone calls. The priority ranges from 0 to 63 for each type of packets.

H.323 Ports

Static	When selecting static H.323 ports for TCP connections the ports 5555 or 5556 will be used for Q.931 and H.245 respectively.
Dynamic	The system will allocate which ports to use when opening a TCP connection. The reason for doing this is to avoid using the same ports for subsequent calls as some firewall consider this as a sign of attack.

3.5 Diagnostics

Diagnostics contain:

- System Information
- Call Status

3.5.1 System Information

Select System Information to view system numbers, line status, software version and other useful information.

System Information contains:

System Name
My IP Number
My IP Address

Software Version

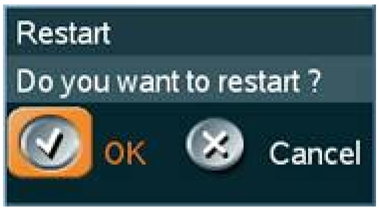
Serial No
MAC address
Ethernet Speed PC
Ethernet Speed SW

3.5.2 Call Status

Comprehensive information about the call is available through the Call Status window. The menu has two columns, one for transmitted and one for received audio/video information.

3.6 Restart

Restart the system by pressing the Restart button. You are prompted with a dialog box saying: Do you want to restart the system? Press OK to restart, press Cancel (X) to abort.



4 Appendices

Appendix 1: Declaration of Conformity

4.1 Appendix 1

Declaration of Conformity

Contact your TANDBERG representative for a Declaration of Conformity.